

An Online Resource Repository for Training Faculty in Laulima: An Organization and Collaboration of Resources

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Abstract: Online Course Management Systems (CMS) have become one of the most popular technologies in teaching and learning today. The University of Hawaii has recently adopted an open source CMS and created a customized version for the University called Laulima. Many campuses in the University of Hawaii System (UH) are duplicating efforts by individually developing resources and employing staff to support faculty use of Laulima. A needs analysis conducted by the author regarding faculty use of Laulima revealed difficulty in accessibility of resources, resource availability, redundancy of resource materials developed by multiple campuses, and the need for self-paced support that can be used after introductory workshops or instead of the lengthy workshops. The purpose of this project was to design, develop and evaluate the usability of an online repository of Laulima tutorials developed at multiple UH campuses and made available to faculty throughout the UH system. Faculty throughout the UH system will have access to the repository through the course management system Laulima and specified staff editors from participating UH campuses will be able to edit and upload the files and tutorials to the online repository. Faculty users, staff editors and Educational Technology graduate students learning how to design an online course using course management systems from the participating campuses evaluated the usability of the centralized online resource repository for a period of ten days. Evaluation data was collected via online surveys and the results indicated the interests of participants and the success of the idea of a centralized online repository. Findings are expected to be of significance to those interested in or developing centralized online collaborative systems.

Introduction

According to Simonson (2007), "Course Management Systems also called Learning Management Systems or virtual learning environments are internet-based software systems designed to assist in the management of educational courses for students, especially by helping teachers and learners with course administration" (p. vii). It aids in building extensive communication both synchronous and asynchronous through built-in tools and also provides learner assessment. Technology has become an integral part of education today but its incorporation into class and curriculum is still varied. Course

Management System (CMS) technology met a similar fate and instructors have been blamed for the lack of CMS technology adoption in class. Although the need for training is high the blame is not completely true because barriers to technology adoption exists in many forms with one of the most important being access to resources for training whenever and wherever instructors need it (Masi & Winer, 2005; Roger, 2000). Faculty development for technology integration in curriculum though addressed through mentoring and workshops it still is identified as one of the top five challenges (Diaz et al., 2009). In conjunction with this there are pressure and challenges faced by the instructional and technological support staff to constantly design and deliver new and current resources and effective methods for faculty development.

Most campuses of the University of Hawaii System have individual support staff and resources for faculty development. Each campus with their resources and staff has been producing redundant data and services resulting in inefficient use of capital and manpower in information creation and resource management. Further a needs analysis revealed difficulty in accessibility of resources, need for availability of resources anywhere, anytime, redundancy of resource materials developed by multiple campuses, and the need for self-paced support that can be used after introductory workshops or instead of the lengthy workshops.

The purpose of this project was to design and evaluate an online resource repository on Lulima tools within the University of Hawaii course management system, Lulima for faculty at the University and to initiate the inter-college collaboration of resources and services of the instructional and technical support staff to streamline efficiencies. The site was designed keeping in mind a set of objectives visibly just-in-time support for faculty on Lulima tools, readily available updated information on Lulima tools, anywhere, anytime access to Lulima tutorials, easy access and retrieval of information, online resource as a reference site for faculty development, online resource as a long-term support for faculty development, centralized repository for all Lulima tools, initiate inter-college collaboration of resources and services, minimize redundancy of resources by sharing at the central repository and alleviate the overall investment on creation and management of information.

This project was unique because it endeavored to bring about sharing of resources and collaboration of services. Although some resources have been available online since the beginning of adoption of Lulima, a central organized repository where resources are easy to access, update and organize through inter-college collaboration of resources and services was not available. The framework of the project was designed based on a need analysis conducted by two facilitators from Kapiolani Community College and College of Education on what the faculty want in terms of support and problems faced by support staff for faculty development.

Background

The University of Hawaii System adopted the open-source software Sakai Project and developed its own course management system, Lulima in 2008. All campuses in the UH

system have access to Laulima for course design, management, delivery, learner assessment and communication. The Information and Technology Services of the (ITS) University provided workshop videos on how to use the Laulima tools in addition to manuals and tutorial documents for both faculty and student. Additionally, each campus has their own instructional and technical support staff to provide resource materials and services for their faculty, staff and students.

An important point about CMS adoption that Lane (2008) addresses is that faculty members and instructors who are new to technology and who are not so involved in technology find themselves being overwhelmed by the CMS software. Congruently, Morgan (2003) says that the powerful functionalities and tools of CMS and its uses in teaching have received praises through inspired faculties but have also faced dissent due to the complex nature of the technology that required "far greater skill, patience and dedication" (p. 6). The UH system has faced similar issues when it comes to the effective and extensive use of the CMS Laulima. Morgan (2003) and Rogers (2000) found that growth in adoption of CMS by faculty into curriculum is a gradual process and requires an approach that provides long-term support.

Yohon & Zimmerman (2006) suggest despite introductory training and workshops as support for faculty development, integration of CMS technology into curriculum has been low. Similarly despite ITS support for Laulima individual campus in the UH system built their own instructional and technical support staff to promote and increase the use of Laulima for course design and delivery. Support staffs developed and delivered workshops, seminars, resource materials and mentoring programs for faculty development in technology integration into curriculum but with varied degrees of success. Robert (2002) and Weaver (2006) argue that these workshops and seminars are helpful but only to a certain extent. Although faculty are motivated to use CMS technology research reveals that 21st century universities should provide variety of support with one of the most important being online resources for continued self-paced support (Diaz et al., 2009).

Communication between support staff of each UH campus revealed that they had similar resources showing redundancy of information creation and management. Additionally the current economic crisis has adversely affected the instructional and technical support staff resulting in budget and job cuts. According to Miller (2005) there are many colleges within a university striving to resolve these problems operating in isolation without complete knowledge that resources and aids could already be out there requiring some form of sharing. Moreover, duplicate resources are sometimes present indicating the waste of investment on time and money and reasons for collaboration.

Collaboration for a centralized resource aids in the electronic investment savings for each institution by being interdependent and mutually supportive, richness of experience from seeing it and sharing resources and above all learning and developing collaborative skills instead of competing (Baldwin, 1998; Campbell & Littlejohn, 2002; Koppi, Bogle & Bogle, 2005; Millchap, 2003; Saylor, 2006). An online resource repository embedded within the CMS serves both as an example of the usage of the tools and a just-in-time

support within the CMS (Bringleon & Carey, 2005; Collis & De Boer, 2004). Therefore, this project aims to develop an online centralized space embedded in CMS Lulima for collaboration and sharing to bring the efforts, resources and services of support staff from the campuses in UH system together. The online resource will serve as a central resource on Lulima tools available anytime, anywhere for an ongoing self-paced support.

Methodology

This project involved the design, development and evaluation of an online resource repository of Lulima tools within the University of Hawaii course management system, Lulima for Faculty. It was designed as a course site within Lulima to utilize the secured accessibility to resources on Lulima tools and to afford effective time, effort and resource management for the editors at different campuses. The site focused on tutorials and functions and features of all the Lulima tools. The 32 tools in Lulima were divided and grouped into five (Figure 1) logical categories: Administration, Collaboration, Assessment, Communication and Organization based on similar functions they provided and descriptions for each category explained the type of tools it contained.



Figure 1. Home page from the course site Lulima for Faculty

Extensive research was conducted by the designer on all the Lulima tools from Lulima manuals, videos, trusted websites and the Sakai database to develop comprehensible textual descriptions of each tools' functions and features. Staff editors from each participating campus were added to the site and folders for each campus was created using the Resources tool in Lulima to enable sharing of resources to the central repository. These folders were used as a point of reference for the designer and support staff from the collaborating campuses. They each then added their own step-by-step screenshot PDF tutorials and video tutorials of the tools. This provided learners with the choice of different media for learning.

The Wiki tool in Laulima was used, as a means to record the list of PDF and video resources for each tool. This aided to keep updates of the PDF and video tutorials for each tool and also tutorials that were current. The Wiki tool was used to minimize redundancy of tutorial resources and to keep the tutorials current reflecting any changes in the functions or features of the tools after software updates. The Wiki tool along with Resources, Site Stats, Site Info and Mail tool was made available only to the editors of the site. Several prototypes of the site were developed and discussed with the project mentor, site facilitators and editors to incorporate maximum feedback in the development phase before implementing the final design for the site. Based on feedback from several sessions conducted, two additional categories "For Students" and "Miscellaneous" were added to the site. These categories addressed the common issues that both teachers and students faced in terms of use of Laulima. To minimize accessibility issues, the Laulima Menubar was used as the left hand primary navigation links. Internal links and buttons in the header and footer of the sites were used for added flexibility.

Development and Design

The framework of the online resource site was developed using Hyper Text Markup Language (HTML) and Javascript and the design and layout was done using Cascading Style Sheets (CSS). Adobe Dreamweaver, Photoshop was used to edit the style sheet as well as the framework of the site. The CMS Laulima was used to embed the online resource site and utilize the Laulima server to create the centralized repository.

The ASSURE model was used to guide the development and evaluation of the project. Analysis of the learners revealed two different types of learners who would be using the online resource site: faculty and staff identified as normal users and facilitators, managers and support staff identified as editors. The online resource repository was designed to meet specific objectives of just-in-time support for faculty on Laulima tools, readily available updated information on Laulima tools, anywhere, anytime access to Laulima tutorials, easy access and retrieval of information, online resource as a reference site for faculty development, online resource as a long-term support for faculty development, centralized repository for all Laulima tools, initiation of inter-college collaboration of resources and services, minimize redundancy of resources by sharing at the central repository. Based on the identified objectives materials were developed and utilized in the development of the project.

Evaluation

Formative evaluation of the module consisted of two parts to assess the relevancy of content, accessibility of information and usability of design of the site: one-one-review and small group testing. Several support staff editors and a sample group consisting of faculty and aspiring teachers participated in the evaluation of the content, design and usability of the site. The editors and user participants had different set of questions regarding the usability of the site based on the way each would use the online resource.

One-on-One Review

A subject matter expert and a knowledgeable learner gave one-on-one reviews. These reviews were conducted remotely and the reviewers had a Lulima account, access to their own computers and a broadband Internet access. The subject matter expert was one of the editors and facilitators of the site and had several years of experience in the use of Lulima tools as well as online resources. The knowledgeable learner was a new faculty member who had used Lulima for a couple of months but had not used a variety of tools. Reviewers were granted access permissions to the course site and were given a five-day period to review the site. A detailed email consisting of project and site information and things to be done was sent to each reviewer. A checklist for each reviewer was created to aid in the evaluation of the site. Reviewers entered their feedback in an online survey that was expected to take them 10 minutes to complete.

Small Group Testing

The small group consisted of total 14 participants where 11 were normal users and 3 were editors. The normal users were students from Educational Technology master's program and enrolled in the course Design of Online Courseware where they had to develop a mini course using a CMS. The small group participants were given access to the site for a period of 10 days to review the site and complete the specified survey. An introductory e-mail was sent to the participants explaining about the project, the site and the things they were required to do in order to complete the evaluation in the time frame specified. The small groups testing participants reviewed the site and completed the respective 10 minute anonymous editor and user survey.

Instruments

A checklist for each reviewer was created with focus on Content, Layout, Access, Visual, Navigation and Recommendations and several questions for each focus area. There were two anonymous surveys one for editors and one for normal users because editors would be creating, maintaining, collaborating, sharing and updating the site and the resources while normal users would be accessing, reading, downloading and utilizing the resources. The questions for the evaluation surveys were developed based on ARCS model of motivation to gauge information on the relevancy of the site content, participant confidence in the usability of the site and the overall satisfaction in easy information access and design of the site. The user survey had 24 questions and editor survey had 25 questions. The questions in the survey addressed the design issues: layout, navigation and visual appeal, tool categorization, content organization and information access and retrieval. Demographic and attitudinal data were also collected through the survey.

Results

The responses from the survey showed that the centralized design of the course site, as a repository within Lulima was a good and effective way to collaborate services and share resources. The site as a central repository and the overall design augmented easy access to resources and information retrieval. Cumulative response from small group testing on

the site content showed 64% agreed and 36% strongly agreed that they understood and followed the content organization, descriptions of categories and tools, tool categorization and content of the site (Figure 2). One of the editor participants commented, "The design is very appealing and the layout is uncluttered and simple to follow. The categorization and organization of tools makes greater sense when an instructor wants to use the tool correctly"

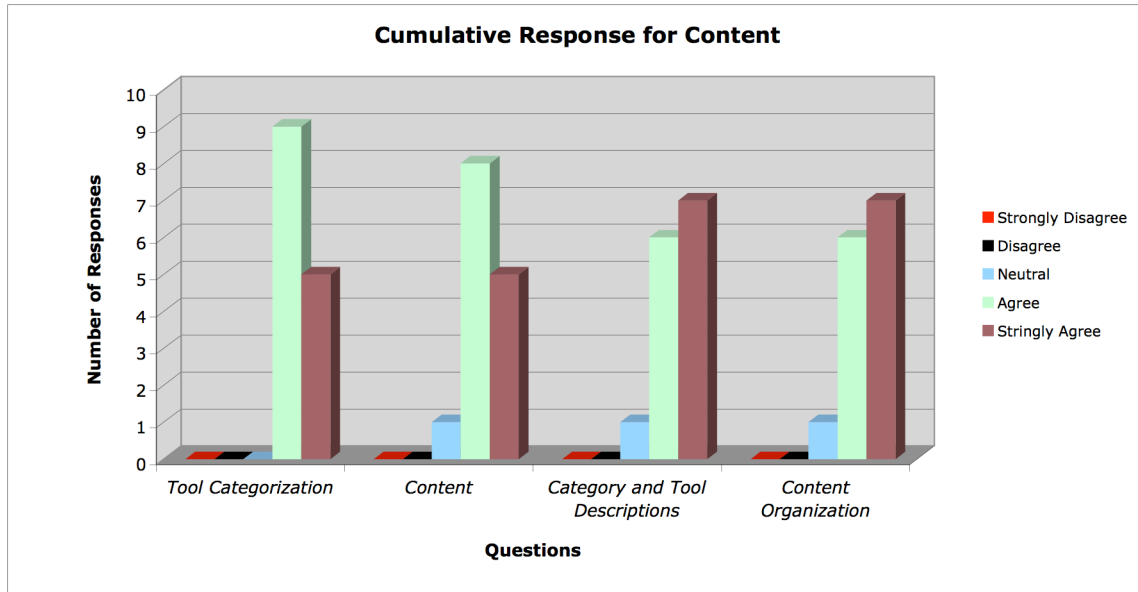


Figure 2. Cumulative responses for questions on content of site

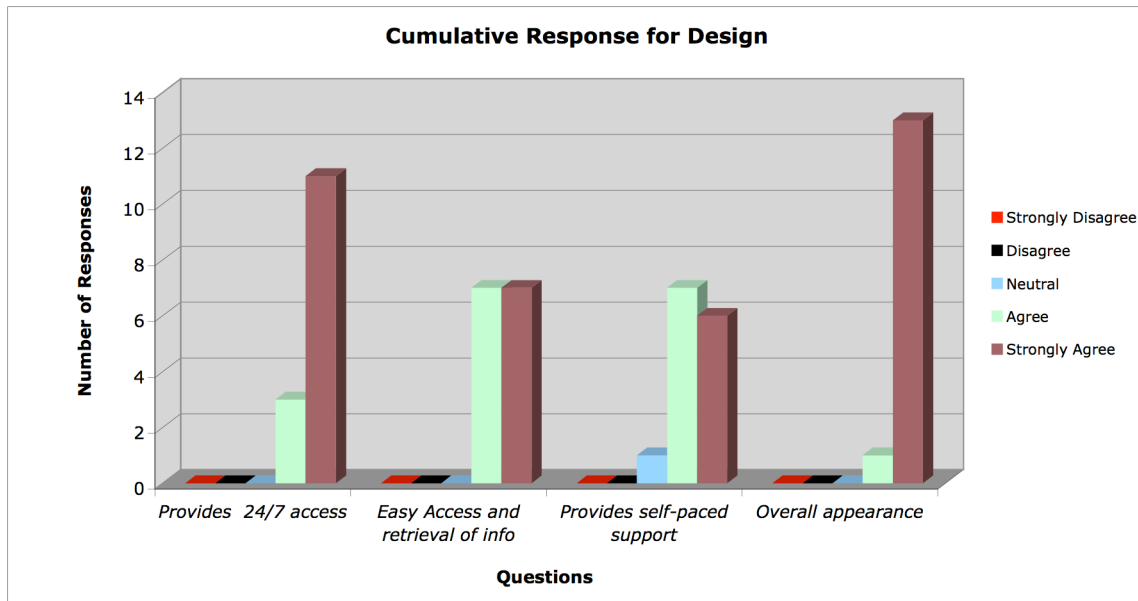


Figure 3. Cumulative response to questions on design of site

Figure 3 shows the cumulative response of small group participants to the design of the site. Fifty percent of participants agreed and another 50 % strongly agreed to the easy access to information and information retrieval. One of the editors said, “I had an easy time navigating around the site. Very easy to use and packed full of very valuable resources and information. Really great site!!” One of the normal users commented, “The site is easy to find the documents and videos you need for a specific Laulima tool” and another said “nicely organized attractive and "non-threatening" Comments from most participants echoed the same sentiments on the ease of information access and retrieval. Participants’ perception of the site as a self-paced support also received positive response and 79 % agreed that the site could provide 24/7 access to resources on Laulima tools.

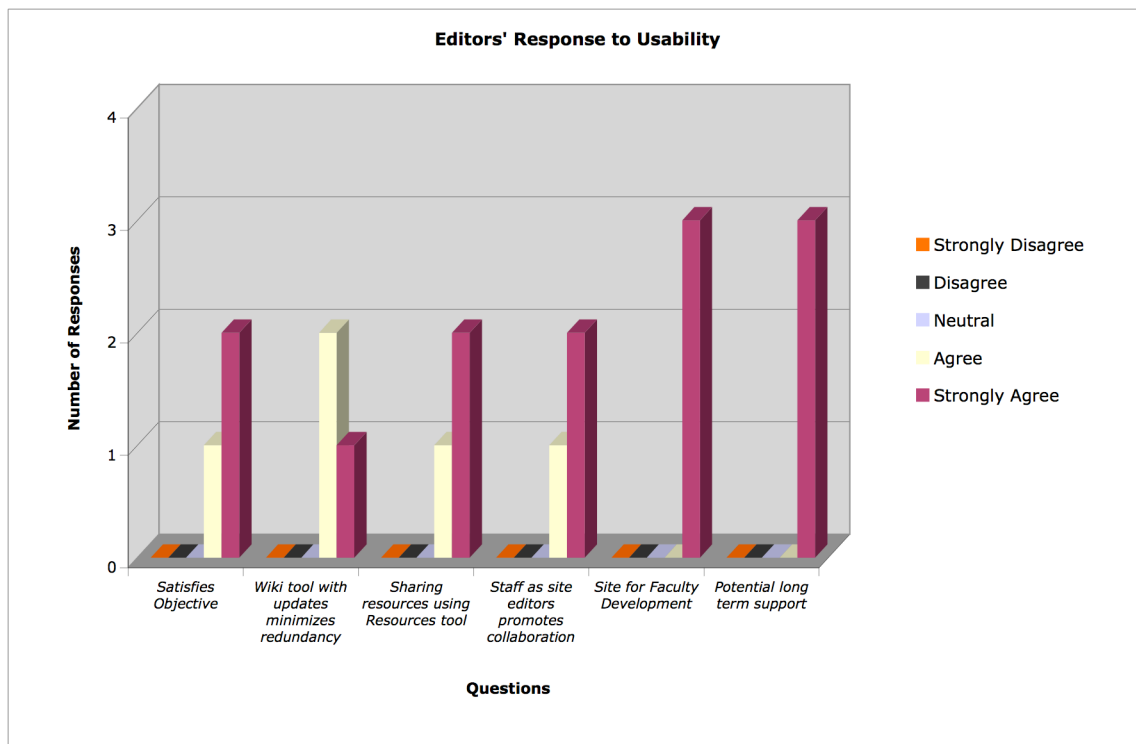


Figure 4. Editors’ response to the usability of the site

Editor responses to usability of the site clearly showed that almost all of the questions received strong agreement on the uses of the site as an online resource on Laulima tools (Figure 4). The following comment supports it. “Impressive way to organize materials from all the various tech support offices around UH” The bar graph shows 100% strongly agreed that the site could be used as a potential long-term support and for faculty development. 67 percent of the participants strongly agreed that the site promoted sharing of resources and collaboration of services between the participating campuses.

The user responses to the usability of the site were mainly positive. These comments show user attitude towards the different media of learning. “Obvious inputs from multiple campuses. I like that both PDF and video alternatives are available for many topics”, “As a visual learner, I find the video tutorials were very effective to me.” The results match

the positive comments where 81% strongly agreed to the choices offered in learning media (Figure 5). 73 percent of participants felt confident that the site could provide assistance on Laulima tools and that this assistance was available anytime anywhere.

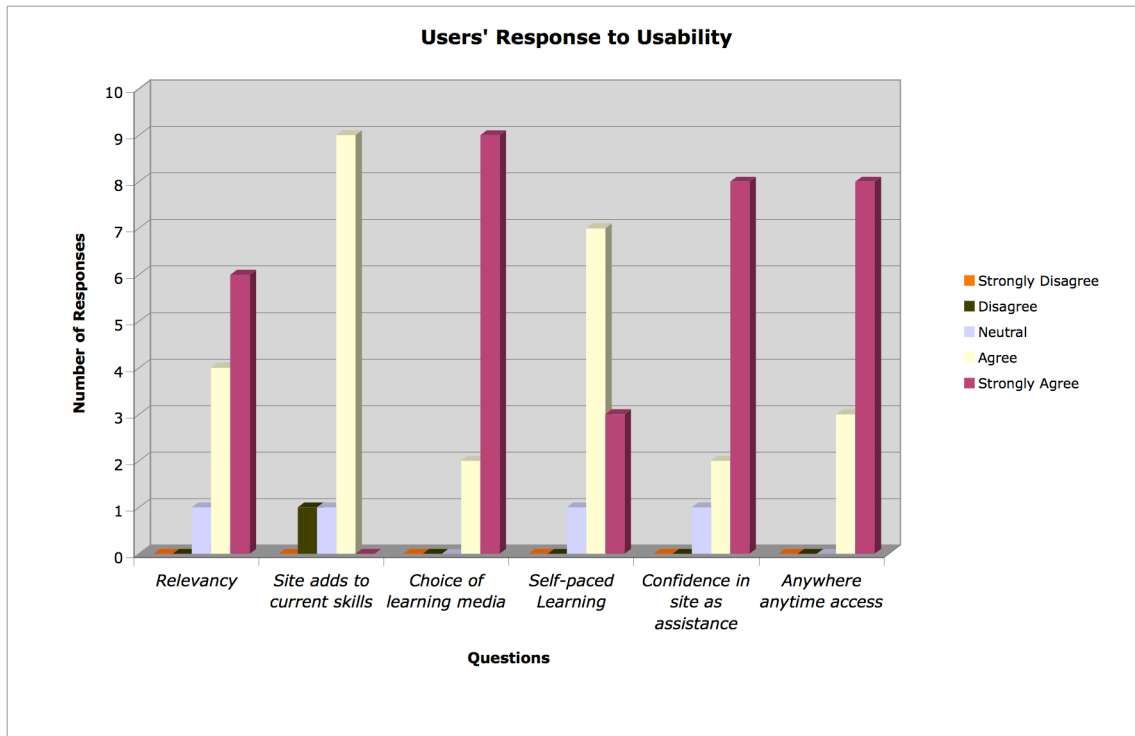


Figure 5. Users' response to the usability of the site

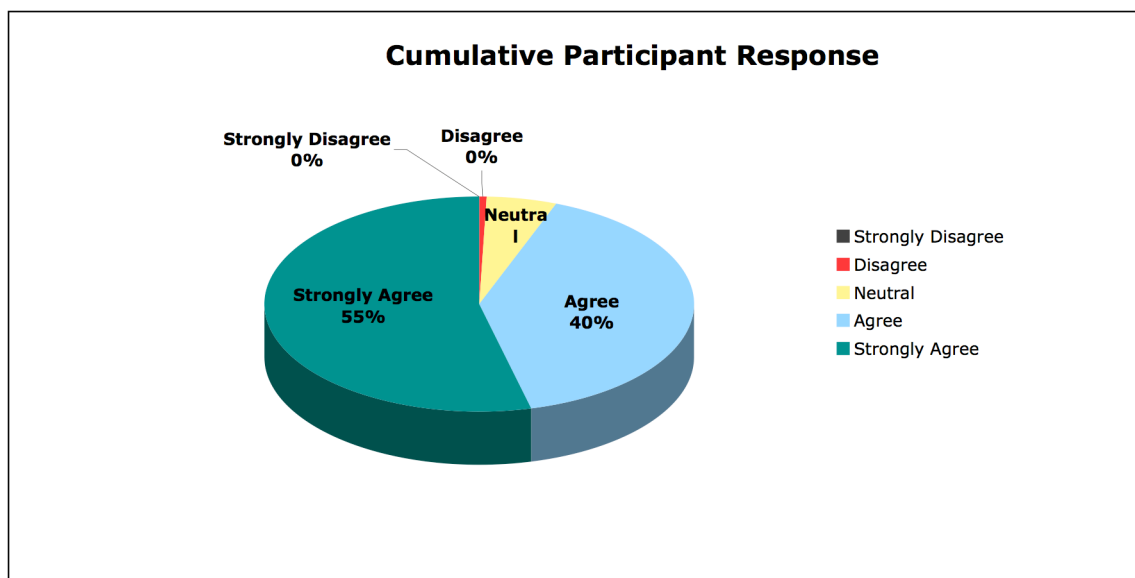


Figure 6. Cumulative Participant Response

The pie chart provides a cumulative response by participants from the small group test (Figure 6). It shows a total of 95 percent of the participants either agree or strongly agree to most of the questions highlighting their positive interests and attitude towards the course site as a whole.

Revisions

Based on the one-on-one and small group reviews some minor revisions were made to the site. One of the editors mentioned that the Discussion tool had been phased out so it was removed from the site. The width of the site was one of the major issues identified by both normal users and editors. The width of the site has been revised to fit both small and large screens. Typos and non-working PDF and video links were also corrected.

Suggestions for Future Changes

In the course of research and the development of the project, the researcher found several areas that could be changed and or further developed in the future. One of the areas identified for further study was pedagogical categorization and description of tools to refine the online resource repository and make it more helpful in terms of technology integration into curriculum. Some of the other major suggestions for future changes were a template for the PDF tutorial and a format for the video tutorial to keep it consistent throughout the site for each tool. One of the editors suggested that the Wiki tool used to maintain the updates on the tool resources should contain the dates and time the tutorial was created and not when the tutorial was posted. Congruently, one of the normal users says, "I might worry that the tutorials are inconsistent (or dated?). It might be better to also cite the source and the date last changed".

Conclusion

Online resources have been identified as one of the most important tools for faculty development (Diaz et al., 2009; Saylor, 2006) and the results from this study indicate that it can prove to be a potential resource for faculty development for both self-paced and long-term support. According to Miller (2005) campuses within a university often operate in isolation without complete knowledge that resources could already be available and some form of sharing is all what is required. The positive results from this study support the need and use of a central collaborative site that promotes sharing of resources and enables collaboration of services from campuses within a university. Additionally, it was found that learners preferred different learning media when trying to learn the functions and features of Laulima tools. It is a hope that the results from this study will serve as a building block in generating ideas for development of a central collaborative online repository that will provide better self-paced support, just-in-time support and long-term support.

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